TITLE

A method for organizing financial instruments in a CSD-system.

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TECHNICAL FIELD

The present application relates to a method for use in a so-called Central Securities Depository, commonly abbreviated as CSD, by means of which method financial instruments can be organized in the CSD-system. The invention also discloses a

10   computerized system for carrying out the method.

BACKGROUND ~~ART~~

Traditionally, centralized institutions have been used mainly for storing gold~~[[,]]~~ which belongs to different nations in ~~one and~~ the same location. When transferring

15   assets from one nation to another, all that needs to be done is to simply transfer gold from the "pile" which belongs to the paying nation to the "pile" which belongs to the nation that is to receive the payment. ~~As can be realized, the use of the~~ The principles of centralized institutions greatly facilitates the processing of payments, and for this reason, there ~~has arisen~~ is an interest in ~~for~~ using such centralized

20   solutions for ~~other~~ commodities other than gold, in principle for any kind of commodity or instrument that can be imagined in the financial market, e.g., bonds, shares, etc.

~~Thus, in~~ In such an "expanded" centralized system~~[[,]]~~ there would be a plethora of

25   instruments. The gathering of all instruments in one place (physical or virtual) ~~facilitates~~ is advantageous for those using the system, e.g., issuers, investors, and ~~not least,~~ the operator of the system. Such a system ~~could be~~ is referred to as a Centralized Securities Depository, abbreviated as CSD.

30   Each kind of financial instrument ~~that would be comprised~~ in such a system would be defined by ~~so-called~~ attributes, which are ~~more or less~~ specific for each individual instrument. According to contemporary solutions and systems, the attributes for each individual instrument comprised in a system are "hard coded". Due to, inter alia, the vast amount of instruments which the system needs to be able to handle, this ~~[[(]]~~ the

"hard coding"[[)]] ~~would make~~ makes the system difficult and cumbersome to handle, for example, due to the fact that new financial instruments can appear in existing markets, or when it is desired to adapt the system to new markets, or exchange information between the markets.

~~DISCLOSURE OF THE INVENTION~~ SUMMARY

There is thus a need for a method ~~by means of which~~ to add new instruments ~~can be added~~ in an easy manner to an existing CSD-type system. The method should also facilitate making amendments to existing instruments in the system.

This need is met by the present ~~invention in that the invention discloses a~~ method for organizing financial instruments in a CSD-system ~~in which system~~ where the instruments can be traded ~~with, according to which method.~~ ~~attributes~~ Attributes are assigned to the instruments[[.]] ~~Said attributes~~ which define the instruments[[,]]. ~~and according to the method the~~ The instruments are organized in a hierarchic multi-level structure as follows:

- a link is created between a first instrument on a first level in the hierarchy and instruments on a second, lower level in the hierarchy,
- the link between the instruments on the first and second levels of the hierarchy is defined by the fact that all of the attributes which are comprised in the instruments on the second level are also comprised in the instrument on the first level to which the instruments on the second level is linked.

Preferably, ~~according to the method of the invention[[,]]~~ each instrument is only linked to one other instrument on a level above it. ~~Also, suitably according to the method, any~~ Any amendment to an attribute in an instrument ~~will cause~~ causes the same amendment in the same attribute of those instruments which are linked to the amended instruments and which are on lower levels in the hierarchy than the amended instrument. ~~Thus, by means of the method according to invention,~~ In this way, amendments to existing instruments ~~is~~ are greatly facilitated, since amendments need only be made on the highest level common to the instruments which are to be amended, and the amendment will then "trickle down" to the instruments in question.

The ~~invention~~ technology greatly facilitates the adding of new instruments to the system. When there is a need or desire to add a new instrument to the system, ~~all that needs to be done is to find~~ an existing instrument in the CSD-system is found which has at least all of the attributes of the instrument ~~which is~~ to be added. The new instrument is then placed on a level in the hierarchy of the system which is below said existing instrument, and a link is created between the instrument to be added and the existing instrument.

~~The invention also relates to a~~ A computerized CSD-system is described, which comprises a register of instruments~~[,].~~ ~~said~~ The register ~~being~~ is organized along the principles ~~of the invention as~~ described above.

BRIEF DESCRIPTION OF THE DRAWINGS

~~The invention will be described in more detail in the following, with reference to the appended drawings, in which~~

Fig 1 shows one of the principles behind the ~~invention, and~~ technology,

Fig 2 shows ~~another principle of the~~ a method ~~according to the invention~~, and

Fig 3 shows an example of the method ~~according to the invention~~, and

Figs 4 and 5 show flowcharts ~~of parts of the invention~~.

~~EMBODIMENTS~~ DETAILED DESCRIPTION

~~As stated above, the invention intends to meet the needs in~~ In a CSD-system ~~in which system~~ where various financial instruments are traded, ~~with. The~~ the instruments are defined by ~~so called~~ attributes. Examples of attributes ~~could for example be~~ include the identity of the issuer of the instrument in question, the ISIN code, or some other code which identifies the instrument, e.g., CUSIP, the date of issue of the security, the interest rate, etc.

~~It has been described previously in this text which the main needs are that the invention is intended to address. However, in~~ In addition to ~~those needs and desires, the invention should preferably also provide good solutions to the following situations relating to~~ the objectives described above, additional desirable objectives for instruments ~~comprised~~ in the register of a CSD-like system include:

- re-using different attributes between different instruments, and

- deriving one instrument from another instrument

~~The invention proposes the creation of a~~ A multi-level hierarchical system is provided for organizing a register of financial instruments in a CSD-system. ~~In the system according to the invention, there will thus be a number of different levels, with said~~ The number of levels preferably is not ~~being~~ restricted by an upper limit.

With reference to Fig 1, one of the principles of a multi-level hierarchy ~~according to the invention~~ will now be explained~~[[:]]~~. ~~in~~ In ~~fig~~ Fig. 1, a group of instruments ~~are~~ is shown~~[[,]] said instruments being~~ arranged in a multi-level hierarchy~~[[,]]~~. ~~where instruments~~ Instruments on a higher level (AB) can have links to several instruments on the lower levels (ABBB, ABCC)~~[[,]]~~. ~~but each~~ Each instrument ~~can~~ preferably only ~~have~~ has one link to the level above its own.

The instruments (AB) at the top level of the hierarchy are suitably not instruments which can be traded ~~with~~ as such, but are rather generic "templates" for the instruments on the lower levels (ABBB, ABCC~~-~~; ABBB123, ABCC456) ~~which instruments~~ that are "real" instruments that can be traded, ~~with, such as~~ e.g., government bonds or ~~mortgage backed~~ mortgage-backed securities and shares. ~~Thus, a~~ A template in a system organized ~~according to the invention~~ can either serve as ~~a template for~~ a template on the next level, or as a template for an instrument on the next level. ~~It should be pointed out there that although~~ Although ~~fig~~ Fig. 1 only shows one group of instruments, the system ~~according to the invention~~ can comprise a virtually unlimited number of such groups.

As can be seen from the group shown in ~~fig~~ Fig. 1, one of the principles behind the ~~invention~~ technology is that any instrument on any level of the system "inherits" all of the attributes of the instrument to which it is linked on the level immediately above it. This principle could in fact be said to essentially be the definition of the links between the instruments. ~~Thus, due~~ Due to this linkage principle, ~~of linkage[[,]]~~ when there is a need or a desire for making amendments to one or more instruments, all that needs to be done is to locate, within the hierarchy, the attribute which is to be changed. When the attribute is amended, that particular amendment will "trickle down" to the linked instruments ~~involved~~.

When organizing the group in ~~fig~~ Fig. 1, the following steps could be used:

- Look at the real instruments (ABBB123, ABBB862, ABBB293; ABCC456, ABCC578, ABCC394) which are to be comprised in the register of the CSD-system.

- Find a first set of common denominators (ABBB, ABCC) between the instruments.

- Find a second set of common denominators (AB) between the first set of common denominators.

- When all (or a preset number) of common denominators have been found, create a linked multi-level hierarchy according to the principles outlined above, with the instrument of the most basic common denominator at the highest level, and the real instruments at the lower levels.

The steps described above are also outlined in the accompanying flowchart in ~~fig~~ Fig. 4.

If, at a later stage, a new instrument needs to be added to the register, the following steps could be used:

- find an existing instrument in the CSD-system which has at least all of the attributes of the instrument which is to be added,

- place the instrument which is to be added on a level in the hierarchy of the system which is below said existing instrument,

- create a link between the instrument to be added and the existing instrument.

These three steps are also outlined in the accompanying flowchart in ~~fig~~ Fig. 5.

~~Fig~~ Fig. 2 shows another feature ~~of the invention~~: ~~the~~ inheriting of an attribute ~~{{(}}~~from a higher level to a lower level in the hierarchy~~{{)}}~~ is ~~suitably~~ made either optional, mandatory, or excluded, i.e. prohibited. The "setting up" of which principle of inheritance that is to be used for each instrument and attribute within the

system is suitably carried out by the operator of the system, in a manner which best suits each instrument and the system as a whole.

Naturally, all attributes can be made mandatory to inherit according to the principle of linkage explained previously, but the principle of fig Fig. 2 additionally enhances the ease of handling offered by the invention. As shown in fig Fig. 2, the template instrument at the highest level in the hierarchy comprises six attributes, three of which are optional (shown vertically striped), two of which are mandatory (shown horizontally striped) and one of which is excluded from inheritance (diagonal stripes). Thus, the attributes, which were mandatory for inheritance to the next level, appear in the instruments on the level below the highest level, and the attribute that was excluded from being inherited is also marked as excluded in the second level.

However, the attributes which were optional from the first level to the second may have different properties of inheritance when going from the second level to the third level in the hierarchy. this This is indicated in fig Fig. 2 by virtue of the fact that in one of the instruments on the second level, one of the optional attributes is now marked as being excluded (diagonal stripes) when going to the next (third) level, and in the other instrument on the second level one of the optional attributes from the first level is marked as mandatory (horizontal stripes) for inheritance to the next level and one is marked as excluded (diagonal stripes).

In fig Fig. 3, an example of the invention applied to real instruments is shown:
A group of instruments is organized according to the invention comprises in three levels. at At the top level, there is an instrument template known as "Government bonds". The exact attributes of that template will not be enumerated here, as they should be well known to those working in the field. However, one attribute which Government Bonds have is that they generate an interest. In this particular case, interest can be generated in two ways: fixed or floating. Thus, at the top level, the template is provided with two attributes: one for fixed interest and one for floating interest.

On the next level, there are two templates, one for each of the more specific cases of bonds, which have fixed interest rates, and bonds with floating interest rates. One of

these templates will inherit the attribute "fixed interest" and the other template will inherit the attribute "floating rate". This is done by ~~means of~~ both of the interest attributes (fixed and floating) at the top level being designated as optional for the next level, i.e., the second level. _Then, on the second level, in the template for fixed interest bonds the attribute for "floating interest" will be designated as excluded from the following levels~~[,]~~. ~~and in~~ In a corresponding manner, the template for floating rate bonds will exclude the attribute "fixed interest" from the following levels.

~~Finally, one more feature of the invention should be pointed out. This additional feature is due to the fact that an attribute can not only have~~ In addition to having a characteristic property, for example, fixed or floating interest, an attribute can also have a value. By way of example, in the case of the attribute being "interest," the value ~~would~~ could be the interest rate.

In order to make ~~a~~ the system ~~according to the invention~~ even more flexible and easy to organize, the inheriting of the value of an attribute from a higher level to a lower level can also be made mandatory or optional regardless of whether ~~or not~~ the attribute ~~as such~~ was optional or mandatory to inherit. How a value is to be inherited would be set by, for example, the operator of the system.

~~The meaning of a value of an attribute being mandatory to inherit should be obvious, and will thus not be elaborated upon further here. In the case with optional inheritance of values, the function would be in the following manner:~~

If the inheritance of the attribute is mandatory and the inheritance of the value is optional, the instrument ~~would then inherit~~ inherits a value as an example for the attribute (e.g., interest). A value needs to be set for the attribute in question since the attribute, i.e., the interest rate, is mandatory. The value could be either the inherited ("example") value, or a new defined value. Naturally, other ~~means~~ ways of setting a value ~~should not be excluded;~~ could not be used, for example, using some kind of automated information retrieval system ~~could be used. Likewise, if~~ If the inheritance of the interest attribute ~~was~~ is optional, and that option ~~was~~ is chosen, the interest ~~would need~~ needs to be set, which can suitably be done in the manner just described.